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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/769,753

02/03/2004

Jae-hwan Yoo

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EXAMINER

MARTINEZ, CARLOS A

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/769,753	Applicant(s) YOO, JAE-HWAN	
	Examiner Carlos A. Martinez	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/437,185.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/03/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is not within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The disclosure is objected to because of the following informalities: "14" and "11" have both been used to designate a motor (refer to pg. 2, [0009] and [0014]).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 3, and 5, the meaning of “laser beam” is unclear in relation to the “multi-beam laser”. It is uncertain to the Office whether the “laser beam” is being claimed to be equivalent to a reference to multiple beams considered as a single/whole entity or just as a reference to a single beam from a single source. Therefore, as the claim language is indefinite to the Office, for the purpose of examination these claims will be interpreted to have “laser beam” to refer to multiple beams considered as a single/whole entity and equivalent to the expression “laser beams”. Further, with respect to claim 1, the number of collimating lenses used is also uncertain since the meaning of “laser beam” is unclear. It is uncertain to the Office whether a single collimating lens is being used for multiple beams considered as a single/whole entity or just as a reference to a single beam from a single source. Therefore, as the claim language is indefinite to the Office, for the purpose of examination claim 1 will further be interpreted to have a single collimator lens for which multiple beams – considered as a single/whole entity and equivalent to the expression “laser beams” – will be passed through.

Since claims 2, 4, and 7 are dependent on a rejected parent claim they are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino (US6320647) in view of Appel (US5208456).

- Makino discloses a multi-beam laser scanning unit for scanning a laser beam (refer to lines 17-19 of column 2) onto a photoreceptor medium (refer to lines 47-52 of column 6) comprising: a plurality of laser sources emitting a laser beam (refer to element 30 of Figure 1), a collimating lens (refer to element 35 of Figure 1), a polygon mirror deflecting the converted laser beam from the collimating lens (refer to element 32 of Figure 1), a f- θ lens (refer to element 33 of Figure 1), and a transparent member (refer to element 34 of Figure 1) disposed between the f- θ lens and the photoreceptor (refer to element 36 of Figure 1).
- However, Makino fails to clearly show that the transparent member has a thickness that varies depending on a height thereof perpendicular to a direction where the laser beam passes through the transparent member.
- Appel discloses a transparent member (refer to element 310 of Fig. 11 and lines 60-68 of column 12) – which, as seen in Fig. 11, has a thickness that varies depending on a height thereof perpendicular to a direction where the laser beam passes through the transparent member.
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the multi-beam laser scanning unit, as taught by Makino, with a transparent member that has a thickness that varies depending on a height thereof perpendicular to a direction where the laser beam passes through the transparent member, as taught by Appel, for the purpose of providing an appropriate

transparent member that would allow for a changing of the refraction – as provided through the transparent member with varying thickness – that occurs on separate beams which may enter the same transparent member but at different points of thickness.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino (US6320647) in view of Appel (US5208456), as applied to claim 1 above, and further in view of Misaka (US5581404).

- Makino (in view of Appel) teaches a multi-beam laser scanning unit with a transparent member and a plurality of laser sources.
- However, Makino (in view of Appel) fails to teach a movable member for varying the height of a transparent member.
- Misaka teaches a movable member (refer to elements 104 and 105 of Fig. 11) for varying the height of a transparent member (refer to element 103 of Fig. 11).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the multi-beam laser scanning unit, as taught by Makino (in view of Appel), with a movable member for varying the height of a transparent member, as taught by Misaka, for the purpose of changing the refraction that occurs on a beam by varying the thickness at which a beam of light must travel through.

9. Claim 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino (US6320647) in view of Appel (US5208456), as applied to claim 1 above, and further in view of Appel (US5153768) and *Graham v. John Deere Co.*, 383 US 1, 148 USPQ159 and *In re Dailey*, 149 USPQ 47 (CCPA 1976).

- Makino (in view of Appel (US5208456)) fails to teach a transparent member that has a triangular or a trapezoidal cross-section in the direction where the laser beam passes through the transparent member.
- Appel teaches a transparent member that has a triangular cross-section in the direction where the laser beam passes through the transparent member (refer to element 40 of Fig. 1 and lines 12-17 of column 3). Further, with respect to a trapezoidal cross-section, it would have been obvious to utilize a trapezoidal cross-section since it has been held that a particular configuration is significant or is anything more than one of numerous configurations a person of ordinary skill in the art would find obvious for the purpose of providing a cross-section that would allow for varying refraction due to a varying thickness, see *Graham v. John Deere Co.*, 383 US 1, 148 USPQ159 and *In re Dailey*, 149 USPQ 47 (CCPA 1976).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the multi-beam laser scanning unit, as taught by Makino (in view of Appel (US5208456)), with a transparent member that has a triangular or a trapezoidal cross-section in the direction where the laser beam passes through the transparent member, as taught by Appel, for the purpose of providing a cross-section that will allow for varying refraction due to a varying thickness.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino (US6320647) in view of Appel (US5208456), as applied to claim 1 above, and further in view of Takanashi (US4756584).

- Makino (in view of Appel) fails to specifically mention that the transparent member has an optical refractivity of at least 1; however, it should be known to ones skilled in the art that lenses/prisms, which are typically made of plastic or glass, would have an index of refraction that is greater than 1.
- Nevertheless, Takanashi teaches a transparent member that has an optical refractivity of at least 1 (refer to example 1 and lines 6-20 of column 6; specifically element 7 of Fig.1 which corresponds to n_3).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the multi-beam laser scanning unit, as taught by Makino (in view of Appel), with a transparent member that has an optical refractivity of at least 1, as taught by Takanashi, for the purpose of being able to produce a refraction of light due to the utilization of a medium with a refractive index of at least 1, where it is known that the commonly accepted index of refraction for air is 1.

Allowable Subject Matter

11. Claims 3 and 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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12. The following is a statement of reasons for the indication of allowable subject matter:

Claim 3 and 4 are allowable over the art of record because the prior art does not teach a transparent member that has an inclined lower side that is inclined with respect to a scanning direction of the laser beam, a movable member that has an inclined surface inclined with respect to the inclined lower side of the transparent member, nor an elastic member formed at an upper side of the transparent member, for pressing the transparent member.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos A. Martinez whose telephone number is (571) 272-8349.

The examiner can normally be reached on 8:30 am - 5:00 pm (M-F).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CAM

03/23/2006


HAI PHAM
PRIMARY EXAMINER